



OSTEO-SARCOMA.

AMPUTATION AT THE HIP-JOINT

FOR

A LARGE OSTEO-SARCOMATOUS TUMOR OF THE FEMUR.

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Re-published from The Boston Medical and Surgical Journal.

MARCH, 1859.—J. Lougee, 16 years of age, of very light complexion, and reddish hair, was born in Lowden, Me., of healthy parents, and, so far as he knows, with no scrofula in the family. His employment for the past year has been that of shoemaking. About seven months since, at the upper and front part of the thigh a deep-seated tumor began to make its appearance, immovable, and slightly painful. It increased slowly in every direction, until he was brought to the Hospital in the last week of March, by his brother, who is a medical man. At this period, the left femur, which was the seat of the disease, was slightly flexed on the pelvis, and the upper half of it was occupied by a large, firm tumor, making a very distinct projection in front, but more indefinite behind, where it mounted up, and was lost in the nates. The front part of it was somewhat nodulated, and was in immediate contact with, and partially pressed up, Poupert's ligament. The skin was everywhere movable on the surface of the tumor, except on the outer side, where a slight redness existed, caused by the application of a blister. There was a moderate degree of mobility of the joint, sufficient to show that the articulation had not been invaded by the disease. The patient could use the limb a little, and was able to walk out with support, though very lame. The glands in the groin were healthy, as well as those of the abdomen, so far as could be distinguished; in short, the glandular

system generally was intact. The appetite was poor. He had no fever. The pain in the tumor required the use of an opiate at night. The circumference of the limb over the tumor was twenty-two inches; the measurement of the corresponding part of the opposite thigh, fifteen inches.

Having made an examination of his case, I at once told the brother of the patient, who from his profession was able to appreciate its importance, that all applications were useless, and the only remedy left was amputation at the hip-joint. The case being a very important one, on the following day I called a consultation of the Surgeons of the Hospital, which resulted in the following conclusions. That the disease was probably an osteo-sarcomatous affection of the femur, which, if left to itself, would very shortly terminate the patient's life in a most painful manner, and the only thing to be thought of was the removal of the femur at its articulation with the hip-bone. On the other hand, from the size and situation of the tumor, the operation was an exceedingly hazardous one, more so than in the ordinary cases of its performance; that there was a possibility of his dying during the operation, or within the subsequent ten days; and even if he recovered from the immediate shock, that there might be a re-appearance of the disease; that these conditions being properly placed before the patient and his friends, if they concluded to take the risk, the operation ought to be done. This question having been fully weighed by the patient and his brother, they decided to have the limb removed, rather than run the risk of submitting to the lingering course of the disease.

The operation was performed in the following manner, on Monday, March 28th, the fifth day after his entrance into the Hospital. The ordinary method by transfixion being impracticable, and in view of the possibility of a dissection of the tumor from its attachments, a large flap of skin was raised from its front part; the incision commencing at the root of the scrotum, and terminating just above, and in front of the great trochanter. The flap was now dissected up quite to Poupart's ligament, the fascia over the artery opened, the vessel exposed, a ligature passed around it and tied. An incision was now made on the back part of the thigh, corresponding with that in front, and the flap partially raised. With a short, strong knife the muscles running from the pubis to the inside of the tumor were cut through, and those on the out-

side treated in a similar manner. These incisions loosened the thigh, which had before been confined, and allowed it to be depressed and rotated outward. It was necessary to do this to a great extent, on account of a lobe of the tumor projecting over and obscuring the articulation. The knife was next applied to the capsule, which was divided, the round ligament snapping off at the same time from the powerful force applied to it. The bone was then disarticulated, the great muscles of the thigh cut through behind, and the limb removed. A very large sponge was thrust into the wound, to prevent bleeding, while the smaller vessels in the flap and trunk were secured. By the skilful compression of the aorta by Dr. Gay, the immediate seizure and compression of the flaps by Dr. Cabot, together with the previous ligature of the femoral, scarcely any blood was lost. The vessels in the flaps were successively tied as they were uncovered by the removal of the sponge; it was also found necessary to secure the great femoral vein.

The lips of the wound were brought together by a number of sutures, a compress was applied, and a very large sponge, to make gentle compression, and fill up the deep cavity in the side of the pelvis; over this a towel, and the whole firmly secured by a bandage. The operation was necessarily protracted much beyond the usual time of an ordinary disarticulation, yet after its termination, and just before the removal of the patient from the table, his pulse was as good as before the operation was commenced.

A section made through the tumor and the femur, which was sawn longitudinally through its middle, presented the following appearances. The tumor was beautifully variegated, and presented the ordinary aspect of osteo-sarcoma. It had its origin between the periosteum and the bone, and extended from the middle of the femur quite to its neck. The periosteum covering the greater trochanter had been peeled up, and the sac of it filled with that yellow oleaginous fluid which is so frequently seen in tumors connected with the bone. The parietes of the bone were somewhat thickened in the centre, thinned toward either extremity, and the medullary cavity was not entirely obliterated. The substance of the tumor itself was quite firm, having the ordinary appearances of carcinoma interspersed with spiculæ of bone. A microscopic examination of it was made by Dr. Ellis, and verified the diagnosis. The head and neck of the bone seemed to have

completely escaped invasion. The muscles covering the tumor were partially adherent to it, but none of them so completely incorporated with it as at first had been feared. The tumor seemed to have been entirely enucleated, and, so far as could be ascertained, not the slightest trace of it was left behind.

In the afternoon of the day of the operation the patient seemed to be in a good condition, and complained only of the tightness of the bandage around his body. This was loosened by cutting it away partially, and completely removed on the following morning. He passed a pretty good night, under the effect of a drachm of the solution of the sulphate of morphia, complaining principally of an excessive thirst, which no amount of drink seemed to satisfy, and which was apparently caused by the operation, but I attributed it partly to the ether. On March 30th, the thirst was somewhat alleviated, but he was still without appetite, and complained of a little soreness in the groin; pressure gave pain in the lower part of the abdomen. The pulse was 100.

The following day he took an enema, which emptied his bowels, and seemed to improve his appetite, so that he chewed a little beef; also took brandy and water, and milk punch, to which he was much averse, never having taken spirit in his life.

On Saturday, April 2d, the wound began to be rather offensive, and at the suggestion of the venerable and distinguished Professor Mussey, who was present, the dressings were removed, and a yeast poultice applied; the pulse was rather over 100; the appetite was still doubtful. On Monday, the 4th, his pulse was 120, there was profuse sweating while sleeping; he began to take his food more regularly, and his pulse to have considerable firmness. He was allowed bread, tea and baked apple for breakfast; bread, meat, and baked apple, of which he was very fond, vegetables, with brandy and water, for dinner; for supper, the same as at breakfast; and at bedtime, to drink through the night, from half a pint to a pint of milk punch. On the 8th of April he is reported as doing well, "he makes no complaint, the pulse is about 100, and he may be said to be in a convalescent condition; the bowels are emptied every other day by enemata, and he has taken no purgative medicine since the day of the operation."

The patient went on improving till the third week after the operation. The wound healed well, leaving an aperture at either end for the escape of ligatures. About the twenty-fourth day, on

waking in the morning, he felt a pressure at the inner part of the stump, and shortly after a stream of blood slowly trickled down. Dr. Dyer, the resident surgical pupil of the Hospital, was immediately summoned, and by means of a sponge applied over the apertures from which the ligatures issued, and a strong compressing bandage, succeeded in arresting the bleeding. The bleeding recurred again in about two hours, and was arrested in the same way. When I saw the patient, about 9, A.M., he was rather pale, his pulse rapid, and his system had evidently received a severe shock. He was not much alarmed, but on this and the following day made great complaint of excessive thirst, as he did after the operation, showing that it was the loss of blood, and not the ether, which caused this symptom. From the free escape of blood at the time, and its arterial color, it was thought probable to have escaped from the great vessel, in consequence of the ligature having partially detached itself; and for this reason it was deemed prudent not to interfere with the wound for the next two or three days. No new bleeding having occurred, I then had all the dressings removed. The two ligatures at the outer part of the stump were seized by the fingers, and withdrawn with very slight force. The four ligatures at the internal part of the stump were then separated, and dragged upon singly, and all of them were removed without difficulty. The two large ones, which had belonged to the artery and vein, had probably been for some time detached, and lay coiled up in the wound, causing irritation and suppuration, and probably the hæmorrhage which had given the alarm.

From that time the wound rapidly healed. The patient left his bed in about a week, and in ten days was able to go out of doors. He has now, May 10th, returned home in the full enjoyment of health.

REMARKS.—This case is worthy of notice from having been the first of amputation at the hip-joint that has succeeded in Boston. The following statistics, from Mr. Erichsen, in his valuable work on Surgery, may be interesting, as showing its mortality, and are partly taken from data furnished by Dr. Smith, of New York: Of 126 cases, 76 died; of 47 cases in which it was done for injuries, 35 died; of 10 cases operated on in the Crimea, all died.

The flaps in this case being principally composed of skin, made the wound much less appalling, and more manageable than where

large muscular flaps are left, as in the ordinary operation. This may be considered worthy of imitation, even when not required by necessity, as in the present case. The previous tying of the artery, together with the compression of the aorta, allowed the operation to be performed in a perfectly comfortable manner, without the slightest hurry, and with almost a dry wound, if the expression may be used.

It may not be inappropriate to append to the history of this case, an operation of similar character performed at the Hospital last year, and printed in this JOURNAL among the Records of the Boston Society for Medical Improvement.

*“Amputation at the Hip-Joint.—*Dr. Warren mentioned the case as an interesting one, from the fact of its being the first ever done at the Hospital, and, so far as he knew, in Boston. The patient was a child, 6 years old, and was first seen by him on the 19th of June, at three o'clock, having been injured about two hours before. He was sitting on the curb stone of the sidewalk, when a truck wheeled round against him, crushing his limb against the stones. His injury at first was not detected; being lifted up by some passerby, and placed upon his feet, not being able to support himself, he fell, and received, in addition to his other injuries, a violent blow upon the forehead. When brought to the Hospital his state was as follows. He was quite faint, countenance livid, pulse small. The integuments of the thigh, near the hip, were nearly cut through by a semicircular wound, and on the outside a deep wound in the muscles communicated with the bone, which was fractured obliquely, and denuded nearly up to the joint. As the blood was flowing from this extensive wound, the case admitted of no delay, and amputation was at once proceeded to. The boy was first stimulated with as much spirit as he would bear, and ether was administered, which quickly brought up the circulation. The limb was now separated at the fractured part, Dr. Shaw compressing the artery. Dissection was next made at the side of the bone, which was disarticulated with difficulty, both from the anatomical relation of the parts, these being obscured by ragged muscles, and, more especially, from the remaining portion of the femur being too short to be easily controlled in effecting the disarticulation. The capsule was, however, opened, and the bone dissected out with but little delay. The boy at this moment became deadly faint, and was only restored by using frictions of brandy and ammonia, the latter being applied also to the nostrils. He was likewise suspended by the remaining leg, so as to throw the blood to the brain, and under this treatment soon revived,

although at one moment he seemed to be dead. The vessels were now tied, and the wound temporarily dressed. Just as this was finished, he a second time came in peril of his life. As is often the case with patients recovering from ether, he seemed disposed to vomit, and in fact a basin was held, and he threw up a large quantity of liquid substance. Immediately after this, he fell back as if exhausted, a cold sweat came over him, and the respiration and pulse ceased. The frictions, and other means for restoring suspended animation, were at once again resorted to, and Dr. W. proceeded to pass the finger into the mouth for the purpose of raising the epiglottis and making a passage for the air into the windpipe, when it encountered a mass of solid potato-like substance, with which, on further investigation, the whole mouth and fauces were found completely blocked, so as entirely to exclude the air, and almost suffocate the patient. The teeth had allowed the liquid contents of the stomach to pass between them, but had acted as a strainer to retain the solid matters in the mouth. The mouth being now cleared, and artificial respiration set up, the child gradually commenced to breathe, and in the course of half an hour was in a safe state. At nine, P.M., the limb was dressed, and he was taken to his bed in the ward of the Hospital. The patient lived thirteen days, and received during this time the most unremitting care from the nurse in charge of him, and from Mr. Dyer, the House-surgeon of the Hospital. The stump during this time became quite sloughy, and one or two abscesses formed in the groin. The whole wound, however, finally assumed a healthy appearance, and when there seemed to be every prospect of his having gone safely through the most dangerous part of the trial, he suddenly fell off, and died, nearly a fortnight after the reception of the injury."